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AUTHOR Littlewood, William
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ABSTRACT

A discussion of the task-based approach to second language learning looks at different interpretations of "task" and defines it in terms of two basic dimensions: (1) degree of learner involvement in purposeful work, and (2) a continuum from focus on linguistic form to focus on message. It is proposed that these dimensions can be understood better through insight from two areas of cognitive psychology. The first of these accounts for learning through social interaction, and how language is acquired in the context of social and cognitive development. The second is concerned more specifically with how knowledge comes to be represented in the mind and how it becomes available as a basis for performance. It is suggested that with further refinement and research, these areas of cognitive psychology could offer additional insights into the use of tasks in foreign language instruction. (Contains 35 references.) (MSE)

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COGNITIVE PRINCIPLES UNDERLYING TASK-CENTRED FOREIGN LANGUAGE LEARNING

BY

WILLIAM LITTLEWOOD

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COGNITIVE PRINCIPLES UNDERLYING TASK-CENTRED FOREIGN LANGUAGE LEARNING

William Littlewood

1. Introduction

In foreign language teaching we seem to find it hard to do without labels to describe the way we teach, particularly when we are talking about the early and intermediate stages of learning. This need is perhaps a legacy of the recent history of language teaching, in which methods have so often competed with each other for recognition as being, in some way, the "right" way to teach. If a method is to gain public recognition as being "right", it needs a label so that people can name it.

Now that most people feel more sceptical about the value of fixed, identifiable methods in language teaching and feel happier with more flexible sets of principles, which they can adapt to different situations (cf. Stern 1992, Littlewood 1993), the need to attach a label to the way we teach becomes something of an inconvenience. Logically we would need an infinite set of labels to describe specific ways of teaching in specific situations. Since this is impossible, we have to fall back on very flexible labels which give a sense of identity and general orientation, but not much else.

We can illustrate this flexibility with three labels that we often use nowadays when we want to describe teaching approaches: "learner-centred", "task-based" and "communicative". If we take these three terms together, they provide us with a kind of outline map of classroom reality as most people define it today:

- In the classroom there are *learners*.
- Active learning involves performing *tasks*.
- The tasks which these particular learners need to learn to perform are *communicative*.

Since these statements are uncontroversial in the present climate of language teaching, it would probably be difficult to find a teacher who would *not* wish to agree, in one sense or another of the respective terms, that his or her teaching is learner-centred, task-centred and communicative. Difficulties begin to arise, however, when it becomes clear that the terms have different meanings for different teachers and that the apparent harmony merely hides a lack of agreement at a deeper level.

My first task in this paper must therefore be to look (in section 2) at exactly what is meant when people describe an approach as "task-centred" or "task-based". This will also serve to highlight two major dimensions of task-based learning, which will be discussed in section 3. Then, in section 4, I will look at two strands in cognitive psychology which are relevant to the theme, and finally, I will consider how these

two strands can help us in understanding the two dimensions of task-based learning previously considered.

2. "Task-centred" - what does it mean?

One of the main difficulties in approaching the topic of the present paper is that the notion of "task" can be taken to mean almost anything that involves the learners in active and purposeful engagement with a piece of work.

Here I will present three points along a continuum of meanings that are often found nowadays in discussions of the use of tasks in language teaching. The main dimension in this continuum is the extent to which the notion of task either:

(a) includes any learning activity which stimulates the learners' active and purposeful involvement;

or (b) is reserved for particular categories of purposeful activity.

2.1 At one end of the continuum is the much-quoted definition presented by Breen (1987:23), which is probably as all-embracing as it is possible to be. Breen defines a learning task as follows:

> any structural language learning endeavour which has a particular objective, appropriate content, a specified working procedure, and a range of outcomes for those who undertake the task;

Breen's definition of a learning task is broad enough to include an almost unlimited range of learning activities, "from the simple and brief exercise type to more complex and lengthy activities such as group problem-solving or simulations and decision-making". The emphasis in his notion of task - and indeed in the article in which he presents it - is on the need to provide space for the learners' own active contributions and to allow for a range of outcomes, rather than on the exact internal profile of the tasks themselves.

2.2 Moving along the continuum, Rivers is typical of a number of writers who use the term in a sense that is not tightly defined but is clearly oriented towards tasks that involve using language for purposeful communication rather than tasks which focus on language itself. Thus, in discussing the insights that can be drawn from some current models of information-processing, Rivers (1991:262) writes about how students learn by "performing rules (and) creating meanings through their use", i.e. using language "to perform functions in activities, tasks, or discussion".

Stern (1992:196) writes about tasks in a similar way. In the context of discussing "communicative exercises", he writes about how they provide "opportunities for relatively realistic language use, focusing the learner's attention on a task, problem, activity, or topic, and not on a particular language point".

By implication, it is clear that Rivers and Stern understand the notion of task to involve the use of language for the purposeful communication of meanings.

2.3 As an example of the other end of the continuum, we can turn to what is currently taking place in Hong Kong in the context of the Targets and Target-Related Assessment initiative for primary and secondary schools.

In the *Programme of Study for English Key Stage 2* (Hong Kong Education Department 1992:189-190), tasks are defined in these terms:

1. A task involves learners in using language for **purposes** which go beyond merely practising the language in order to learn it.

2. A task requires a **context** from which the purpose for using language emerges.

3. The purpose and the context stimulate the learners to **do** something through language - i.e. the actual action of doing the task ... There are some tasks - such as reading for pleasure - in which the action is almost exclusively internal.

4. The purposeful activity in which learners engage in carrying out a task leads towards a **product**.

This definition goes further than Rivers and Stern in actually restricting the notion of task to those activities which require the learners to engage in purposeful communication through the language.

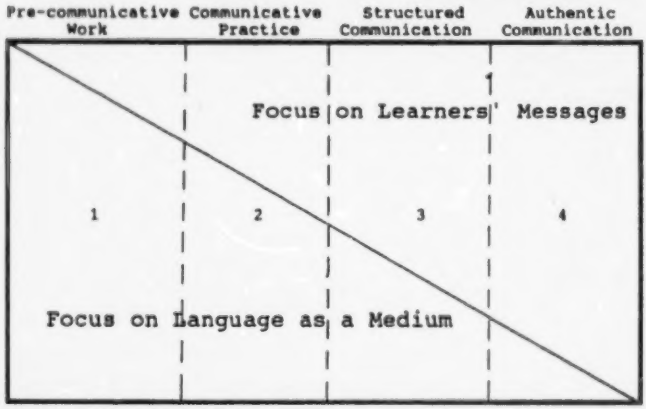
These points along the continuum are illustrated in Figure 1.

The diagram is based on an analysis of language learning activities in terms of the extent to which they are intended to encourage learners to focus on the forms of language or the messages that they can convey through language.

At the left-hand side of the diagram, in section 1, are those activities in which there is the strongest focus on form and the least strong focus on messages, such as uncontextualized grammar exercises. These are here called "pre-communicative work" (cf. Littlewood 1992:72).

As we move from the left towards the right and into section 2, we pass first through activities in which learners still work with a predictable range of language but use it to convey messages (here called "communicative language practice"). These would include simple information-gap activities.

Figure 1. Focus on forms and focus on messages



Moving still further to the right and into section 3, we pass through what I call here "structured communication", in which the learners focus mainly on communicating messages but the teacher has carefully structured the situation to ensure that they can cope with it with their existing resources, including perhaps what they have recently used in more form-focused work. This category would include more complex information-exchange activities or structured role-playing tasks.

On the right of the continuum, in section 4, is the category which I call "authentic communication". This covers activities in which there is the strongest focus on the communication of messages and the language forms are correspondingly unpredictable, such as using language for discussion, problem-solving and content-based tasks.

There is no distinct boundary between these categories. They lie along a continuum. Also, the categories are an idealisation in that different learners will inevitably have different focuses within the same activity. Indeed, the same learner is likely to shift focus in the course of one and the same activity, according to whether he or she is able to draw on language which has already been incorporated into automatic procedures. We will return to this point later.

The different conceptions of task differ in their views about how far towards the left the notion of task extends. Breen includes the whole continuum from form-focused to message-focused activities. Rivers and Stern seem to exclude section 1 and perhaps section 2, placing the emphasis on the right-hand half of the diagram.

The TTRA Project in Hong Kong has a conception which is rooted primarily in the right-hand section (section 4) and indeed specifically excludes the left-hand section by assigning form-focused learning activities to the category of "exercises". It is not always clear, however, to what extent the TTRA conception also extends into section 3, and perhaps into section 2, to include transitional activities such as guessing games or structured information-gap activities.

The basic defining features on which all the positions agree is that a task involves learners actively in a purposeful piece of work, which will have recognisable outcomes depending on the individual learners' contributions to the work.

3. Two dimensions in task-based learning

In order to shape a principled and differentiated approach to the use of tasks in foreign language learning, we can draw insights from all the positions discussed in the previous section and focus on two dimensions which underlie all of them.

The first dimension is the learners' active involvement in purposeful work. This dimension exists whatever subject is being learnt or, within that subject, whatever category of work is being done. To clarify the nature of this involvement and the conditions for encouraging it, we can draw on general psychological and educational principles. We can also learn much from the experience of teachers of other subjects as well as from fellow language teachers.

The second dimension is specific to foreign language learning and teaching. It concerns the relationship of different tasks to the goal of learning a language for purposes of communication. It is along this dimension that we need to differentiate between language-oriented tasks, e.g. word-games and grammatical exercises, and communication-oriented tasks, e.g. problem-solving, role-playing and content-learning. This is the dimension which I used in the previous diagram: from focus on language as a medium to focus on the learners' messages.

These two dimensions can be represented diagrammatically along two axes as in Figure 2.

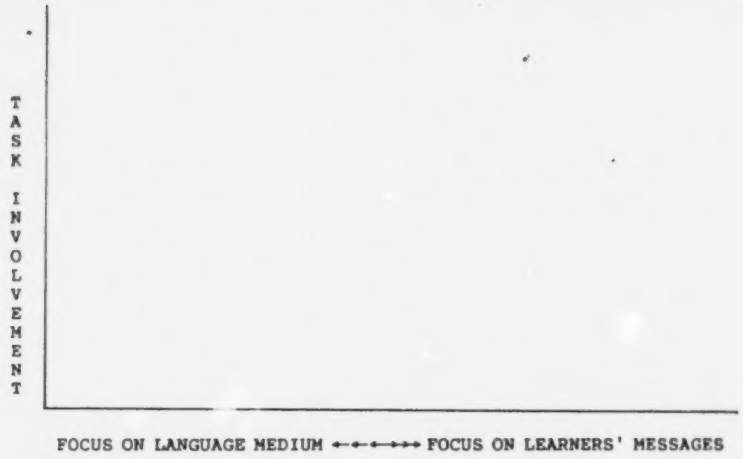
General learning principles suggest that, along the vertical axis, we need to encourage as high a rating as possible from the outset and in all activities.

Language learning principles suggest that we should use the whole of the horizontal axis to help learners to develop knowledge and control in the language.

An important result of thinking initially in terms of dimensions rather than separate categories is that we recognise the gradual nature of the differences involved. Along the dimensions we can then introduce categories, making them as refined as we think necessary in the light of the complexity of learning and remembering that in the real world they form part of a continuum. Thus, along the

horizontal axis, I have already suggested four categories: pre-communicative work, communicative language practice, structured communication and authentic communication. More refined categories can be created to suit particular purposes.

Figure 2. Two dimensions of task-centred foreign language learning



4. Cognitive psychology: two strands

When we investigate the cognitive principles relevant to task-centred language learning, we find two strands within cognitive psychology that seem especially likely to provide useful insights. The first of these strands gives an account of how learning takes place through social interaction and how language is acquired in the context of social and cognitive development. The second strand is concerned more specifically with how knowledge comes to be represented in the mind and how it becomes available as a basis for performance. In this section I will look briefly at each in turn.

4.1 The first strand dates back over sixty years to the work of Vygotsky (1962, 1978), whose basic insights have more recently inspired other researchers and been confirmed by them.

The central belief in this tradition is that a child acquires concepts through social interaction. In the words of Bruner and Haste (1987:1), through social interaction:

> A child acquires a framework for interpreting experience, and learns how to negotiate meaning in a manner congruent with the requirements of the culture. 'Making sense' is a social process.

Adults and older children play an important role in this process by "scaffolding" the child's development, that is, by guiding and supporting it in the course of conversation and other forms of interaction. Bruner and Haste (ibid. 22) mention some of the ways in which scaffolding has been observed to take place:

> correcting the child's early utterances ... pacing the child's problem-solving efforts ... responding to the child's ongoing commentary ... offering action suggestions ... (and) aiding the presentation of appropriate, comprehensible and increasingly sophisticated accounts of behaviour.

The effect of this scaffolding is to enable children to pass through what Vygotsky (1978) calls their "zone of proximal development", which he describes as "the distance between the actual developmental level and the level of potential development ... under adult guidance or in collaboration with more capable peers".

This emphasis on the role of social interaction is not to be confused with the "social mould" theory of child development associated with behaviourism, but rather focuses our attention on a process of "co-construction in dyads and groups" in which "the child does not merely absorb the public concept (but) must reformulate it herself in order to internalize it" (Bruner and Haste op. cit.:22). Thus, in highlighting four central themes which emerge from the contributions to the new edition of the authoritative *Handbook of Child Psychology*, Hetherington (1983:viii) describes the second as an increased emphasis on the ways in which "children are active participants in shaping their life experiences and social development".

These ideas have had a considerable influence on education outside language teaching. For example, in the U.K. they have formed an important part of the rationale for using group work and exploratory talk as a means for encouraging children to develop their own knowledge and ideas (see for example Barnes 1976).

An important aspect of development that takes place though social interaction is, of course, the development of language. It has been shown that there is communication between the mother and the child, e.g. through pointing and grasping gestures, some time before language begins. Thus, language comes in as a means of serving an urge to communicate that already exists. Similarly, children show strong evidence that they acquire important concepts in communication, such as reference, deixis and narrative sequencing, before they use language to express them. Thus, concepts and language develop together in social interaction, one influencing the other (see for example Bruner 1983, 1990).

As with conceptual development, adults and more competent children play an important role in "scaffolding" the child's language development. Thus, language development depends not only on whatever specific language acquisition mechanisms the child possesses but also on the support provided by other people in social interaction. This leads Bruner (1983) to write of a "LASS" (Language Acquisition Support System) which accompanies Chomsky's famous "LAD" (Language Acquisition Device). In a similar sense, Lloyd (1990) writes about the "communicative support system" which children normally receive from adults and peers (but which is often absent in school settings). The functions performed by this system include directing children's attention to relevant features, simplifying information and helping children to organise it, defining terms, storing items in memory, reminding and prompting children, monitoring them and generally supporting them through praise and interest.

4.2 The first strand in cognitive psychology focuses mainly on the social and conceptual conditions that are necessary for the development of language. It does not attempt to answer the question of how language is internalised and becomes available for communication. This question is addressed by the second strand.

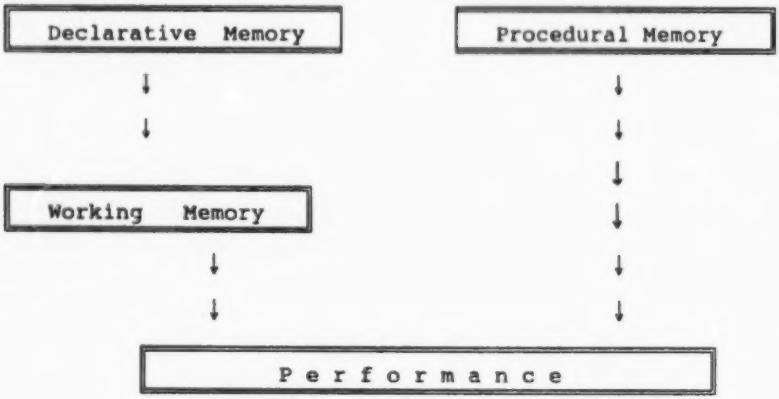
There are currently a number of competing models which attempt to answer the question of how knowledge (including linguistic knowledge) is acquired and becomes available for performance. Two are particularly influential. One is that of Anderson (1983, 1985), based on a distinction between declarative and procedural memory. The other is that of Schneider and Shiffrin (1977), based on a distinction between controlled and automatic processing. Aspects of these models are discussed by McLaughlin (1987) and Ellis (1990).

Underlying both models is the notion that skilled performance consists of carrying out complex sequences of cognitive plans. Many of these plans are low-level and occur spontaneously in skilled performance. Others are high-level and require conscious attention. In using a language, low-level plans would normally include the choice of words and the application of grammatical rules. High-level plans would include formulating ideas and intentions. Both models offer an account of how elements of language move from a state where they can be used only with conscious attention to a state where they can be used automatically.

Thus, in Anderson's model, when items exist in declarative memory, they can only be used as a basis for performance by means of calling them into working memory and assembling the plans for performance "on the spot". Procedural memory, on the other hand, contains actual plans for performance, which can be used directly, by-passing working memory. Since working memory has limited capacity, performance can only occur fluently if a high proportion of the lower-level plans comes directly from procedural memory. Working memory is then free to attend to higher-level operations, which by their nature have to

be created anew to suit the immediate context. This relationship is presented diagrammatically in Figure 3.

Figure 3. Anderson's model of information-processing
(diagrammatic presentation by present author)



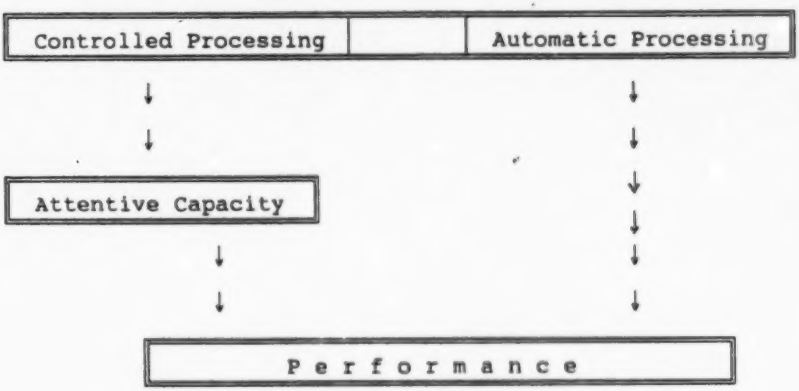
In this account, learning is of two main kinds:

(a) new facts enter declarative memory, from which they can be used for performance provided there is enough space in working memory to process them and assemble plans;

(b) through repeated use, plans can become "proceduralized" and used directly as a basis for performance.

Schneider and Shiffrin's model is different in theory but carries a similar message in practice. When plans are initially learnt, they require "controlled processing", which involves conscious attention. Through practice, they become available for "automatic processing", that is, they can be used spontaneously and do not require attention. Since attentive capacity is limited, fluent performance depends on the automatic processing of a high proportion of lower-level plans. We can represent this in a diagram similar to the one in Figure 3.

Figure 4. Schneider and Shiffrin's model of information processing
(diagrammatic presentation by present author)



In this account, too, there are two main kinds of learning:

a. the initial learning of plans which can be used for performance, but only with controlled processing though conscious attention;

b. the automatization of plans through practice, so that they can be used spontaneously with automatic processing.

These information-processing models cannot be accepted as complete explanations for language learning, since they do not offer accounts of the spontaneous language learning processes which take place in natural settings, including the social settings discussed by Bruner and his colleagues. Carroll (1986) suggests that this problem can be overcome by defining language learning in a minimal way as "noticing regularities" with varying degrees of attention. However, even if we find a common definition for the processes involved, the fact that they can occur with such differing results and in such differing conditions continues to raise practical issues for language teaching.

5. Cognitive psychology and task-centred language learning

Finally I should like to refer back to Figure 2 and use some of the insights from cognitive psychology to clarify the two dimensions which were highlighted there. How can these insights help us to remain as high as possible on the vertical axis of task-involvement? How can they help us to use the horizontal dimension effectively, so that this involvement leads learners towards the goal of communicative ability in the new language?

5.1 The first prerequisite for any form of task-based learning is that the learners' level of personal involvement should be as high as possible. It is particularly the first strand in cognitive psychology that provides us with insights about the conditions that favour such involvement.

(a) Active participation

Research in cognitive psychology serves to reinforce the message that comes also from other sources, namely, that learning is dependent on active participation in the experiences encountered. A major thrust in current discussions about language teaching is concerned with exploring ways of encouraging such active participation through, for example, experiential learning (Kohonen 1992, Legutke and Thomas 1991) and the development of learner autonomy (Little 1991).

For developing the cognitive frameworks that underlie behaviour, mental participation is the most crucial element (cf. Prabhu 1987). For children and even older learners, however, physical participation in overt activity often acts as an essential support (a form of "scaffolding") for mental participation.

(b) Interactive learning

Cognitive psychology emphasises that learning occurs through the interaction of learners with their social environment. This social environment is embodied not only in other persons who are physically present but also in the written and spoken texts that learners encounter.

The importance of interaction in facilitating learning is a recurrent theme in discussions of the conditions for second language learning (see for example Allwright 1984, Allwright and Bailey 1991, Ellis 1990) and also in recent discussions of classroom methods for developing creative communication skills (e.g. Legutke and Thomas 1991, Rivers 1987). In these practice-oriented discussions, too, the value of cooperative learning in groups is emphasised, both for its effects on language learning and for its wider educational implications (cf. Nunan 1992).

(c) Space for personal contributions

Implicit in the need for learners to participate actively in their interactions with other persons and with texts is that they should be able to contribute their own ideas, feelings and choices. The interaction patterns in the classroom need to create space for these contributions and not simply provide a framework for the teacher-dominance that has so often been observed in classrooms (cf. Cook 1991:98-93, Wright 1987).

There are two main aspects to fulfilling this requirement. The first is that the interactions themselves - both those which are directed by the teacher and those which are learner-based, e.g. in groups or pairs, should open up opportunities for the learners to contribute. The second is that the climate in the classroom should create confidence and support the learners' readiness to contribute (cf. Littlewood 1992:98-100).

Opportunities for learners to make personal contributions can exist at a range of levels. At a simple level, learners may simply have opportunities to express their own selves in activities which are otherwise teacher-controlled. At more complex levels, they may be involved in the actual design of their own learning programmes, e.g. in ways envisaged by Breen (1987) and described by Budd and Wright (1992).

(d) Relevance to learners' present framework of interests

If learners are to engage themselves and their mental frameworks with the learning opportunities they encounter, these experiences must be relevant to their present framework of interests.

Two kinds of relevance are important in this context. The first is overt relevance to the reasons why learners wish to acquire the foreign language. This kind of relevance has been addressed by communicative syllabus designers when they have carried out objective analyses of, for example, the situations in which learners will need to use the language and the skills they will need to perform. The second is a deeper kind of relevance to the learners' own personalities, which leads them to respond at an authentic, personal level to the interactions and other experiences they encounter in the classroom.

Many learners, especially adults, need to perceive the first kind of relevance in order to believe in the practical value of what they are doing. However, it is the second kind of relevance that is essential for stimulating the learners to engage their minds creatively with the language and thus to internalise it as a means for expressing their own selves and relating to their world (cf. Littlewood 1992:100-103).

(e) Scaffolding

A basic theme within the first strand of cognitive psychology is that development is not purely a matter of spontaneous growth but is "scaffolded" by adults and more competent peers. The same phenomenon is often observed when second language learners take part in conversations outside the classroom (cf. Hatch 1983:161-75, Larsen-Freeman and Long 1991:130-132).

The role and nature of scaffolding raise important issues for teaching. In discussing first language communication, Lloyd (1990) points out that children

in classrooms cannot benefit from the same degree of scaffolding, or as he terms it, the same "communicative support system", as in natural settings, since the teacher cannot give support to so many children simultaneously. After observing in experimental settings how children's performance on communication tasks improves when they are allowed to collaborate with each other, he concludes that in the classroom:

> There is surely more scope for capitalizing on the situation which appears to work remarkably well outside the classroom, namely peer communication ... in which pairs or small groups of children work together on tasks ... But much more bridging research in this field is needed so that we can get beyond pious exhortations to tested procedures that have been shown to work in the classroom as well as in the laboratory. (Lloyd 1990:70)

This recommendation and its accompanying warning are equally relevant to the foreign language classroom. One particularly important question is the extent to which, or circumstances in which, children obtain the benefits of scaffolding not only by interacting with more competent performers, such as adults or older peers, but also by interacting with children of the same or lower competence. For some functions, e.g. providing affective support and helping to hold items in memory, one would expect positive answers to the question, whilst for others, e.g. monitoring and directing attention to relevant features, this might not be the case. Further investigation should help us to clarify the functions that different kinds of peer communication can perform in foreign language learning and what other kinds of support, e.g. from the teacher or materials, are needed to make it effective.

5.2 The insights derived from the first strand in cognitive psychology are related mainly to the social conditions in which language development takes place. Those from the second strand are related mainly to the cognitive network into which language enters. It is especially relevant in helping us to understand the horizontal axis on the diagram introduced earlier, namely, the continuum from form-focused to meaning-focused work.

(a) A common cognitive network for forms and meanings

The most powerful contribution of the second strand in cognitive psychology is that it provides models which accommodate language knowledge and content knowledge - forms and meanings - in a single framework.

Both of the information-processing models discussed above are concerned with the acquisition of human knowledge as a general phenomenon, of which language knowledge is one central component. They are thus well suited to help us towards one of the main aims stated by Bernard Mohan in his opening plenary paper, namely, that of overcoming the boundaries which have often been erected between language and content.

(b) Relating different kinds of tasks

Within this framework we can build a dynamic relationship between tasks from different parts of the continuum from focus-on-form to focus-on-message. In section 2 of this paper, the continuum was described by means of a set of four categories. Bernard Mohan uses two: "language learning tasks" (which focus on language) and "language socialization tasks" (which focus on content). Whichever categorization we use, information-processing models help us to conceptualize the various ways in which different kinds of task enable learners to internalize new language into a network which also contains the content that is expressed through the language.

(c) Conscious and subconscious aspects of learning

Within the models offered by the second strand of cognitive psychology, we can go some way towards resolving one of the central issues in language teaching, namely, how conscious and subconscious aspects of learning are related in the learners' mind and how we should try to balance them through our teaching methodology.

The notions of "declarative memory" in Anderson's model and "controlled processing" in Schneider and Shiffrin's model assign a clear and positive role to conscious modes of learning such as word memorization and grammar exercises. The learning which takes place in these modes can be used for communication, but only when there is enough space in working memory, or enough spare attentive capacity, to assemble the relevant cognitive plans in the course of the performance itself. Through repeated use or exposure, subconscious learning processes move items and plans into the domain of procedural memory, or automatic processing, where they are available for spontaneous use.

Carroll (1986) and Rivers (1991) discuss further the implications of information-processing models for language teaching practice. Johnson (1988) suggests ways in which they might affect our procedures for correcting mistakes. Littlewood (1992) proposes a methodological framework within which we can integrate the insights from these models with insights derived from natural acquisition models.

(d) Different kinds of learning can occur through interaction

By assigning a role to activities from all parts of the continuum from focus-on-form to focus-on-meaning, information-processing models remind us that interactive, cooperative learning need not be reserved for communication tasks. The principle of building up frameworks of knowledge through interaction extends also to language-oriented work. For example, vocabulary learning can

occur through interactive games. Grammar learning can occur through tasks which require the cooperative exploration of texts.

In this way tasks from different parts of the continuum can be encompassed in a common framework of cognitive learning principles, which can help us to integrate tasks of all kinds into a coherent approach to foreign language learning and teaching.

6. Conclusion

In this paper we have seen how the notion of task is variously interpreted in language-teaching discussions. I have suggested that it can usefully be defined in terms of two main dimensions: the degree of task-involvement and the continuum from focus-on-form to focus-on-message. Insights which help us towards a better understanding of these two dimensions can be drawn from two important strands in cognitive psychology. With more refinement and research, these strands might help us further to improve our approach to the use of tasks in foreign language teaching.

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